Goals and milestones for DØ for the next five months

Goals are physics driven:

Present first results at Moriond, showing that the detector is working and we are on track for new physics results in 2002

Present first physics results at the summer conferences, based on about 200pb^{-1} (or whatever we have)

We have defined a set of physics results that we want for Moriond; in turn, these define priorities for detector operations, computing, software, and the ID and physics groups.

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Physics priorities for Spring 2002 conferences

Physics group	Topics	To be shown at Moriond (data and MC)
W/Z	$Z \rightarrow ee, \mu\mu$ W -> e/μ ; W -> e/μ +γ Z' -> ee	Z mass W transverse mass W/Z cross sections Wγ candidate displays
QCD	Jets – high P_t, dijets Diffraction	Incl. Jet P_t spectrum Diffractive event display
Higgs	W + jets (b tag ?) Z + jets (b tag ?) Z -> bb	W/Z+ *n* jets vs. *n* *bb* candidate display
Top	W + jets (b tag ?) Z + jets (b tag ?)	W/Z+ *n* jets vs. *n*
B	K_s, J/ψ b – μ tag ; b- J/ψ tag b lifetime	J/ψ mass plot K^0 mass and lifetime Signed IP distribution b lifetime
NP	Trileptons eμ(mE_T) , ee, γγ γγ (mE_T), eejj	trilepton events & bg est. mE_T distributions in γγ and dilepton final states

Defines priorities in ID and algorithm groups

Note: Moriond is a major milestone along the way to presenting new physics results at the 2002 summer conferences.

Time line (working backwards):

- Moriond 2002: March 9-23
- Results ready for approval: March 1, 2002
- Last day of data taking to be included: Feb 1, 2002
- Stable physics running: end of shutdown (nominally Nov 17) + 3 weeks (~ Dec 8) until Feb 1, 2002
- Shutdown starts October 8, 2001

This sets the time scale for when things have to be done AND that time scale is VERY short.

Data taking period is defined by ~2 months and **not** integrated luminosity.

Weekly reporting/status

We need regular reports, with quantitative measures, of operations:

Smoothness & efficiency of data taking
Data Processing (is it keeping up with data taking)
Smoothness & efficiency of data access (SAM, etc.)
MC generation for target analyses & background

Goal: monitor with the aim of identifying and addressing problems, and increasing our efficiency

Also need progress and status reports on:

Software releases
Analysis and Reconstruction Tools

Analysis and Reconstruction Tools

Luminosity info /run
Calibration of triggers
Certified SMT tracking (isolated high P_T tracks)
Certified Electron ID (high P_T isolated)
with photon candidates as a byproduct
Certified Muon ID (high P_T isolated)
Certified Jet ID and JES (ΔR= 0.5, 0.7)
Certified Global Tracking (isolated high P_T tracks)
Missing E_T in selected final states
Muon ID in jets for b-ID
Tracking efficiency in jets
understand performance, even if not
enough time to optimize it
Secondary vertices for b-ID

We will monitor progress and manpower in the above areas, and reassign if necessary

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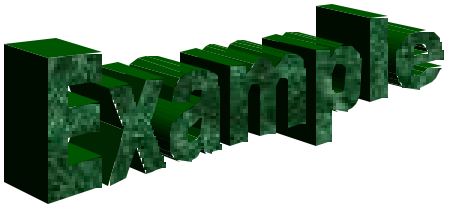
Not on the list (for Moriond):

- Tau ID
- Electrons in jets
- JES for K_T and Run 1 algorithms
- Sophisticated analysis techniques

Certified Electron ID



This includes:

- energy scale
- at least one ID method (with known efficiency at all levels)
- documentation
- known resolution
- fake rate/backgrounds
- MC and data comparison
- sign off by a defined procedure

- able to do physics:

  - Z mass distribution
  - W transverse mass
  - W/Z cross sections

- October 15
  - W/Z -> e signal
  - reporting and oversight established
  - establish a plan for analysis infrastructure (e.g. event display, luminosity tools) and for farm operations during shutdown
- November 1
  - W/Z -> μ signal
  - luminosity available by run and trigger
- November 15
  - J/ψ -> μ μ signal for calibration
  - Operations:
    - 20 Hz to tape
    - Examines, online monitoring of data quality
    - production offline capable of keeping up with data taking & plans to cope with increases
    - use new tape handling system
  - Last date for major changes to Dec 1 software release
- December 1
  - start stable global running; freeze global trigger list (L1 and L3)
  - Establish EM scale
  - b tagging with muons
  - P10.x software release (= final reco code for Moriond)

- January 10
  - certified e, mu physics objects (p10.x)
  - certified tracks (p10.x)
  - certified jet physics objects and certified JES
- February 1
  - b tagging with sec vtx or IP
  - complete data taking for Moriond
- February 8
  - complete data processing for Moriond
- March 1
  - Plots/results ready for approval